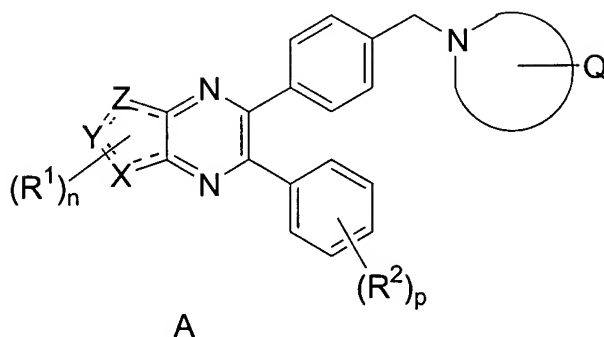


**In the claims:**

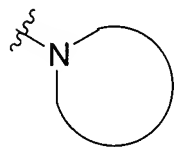
1. (original) A compound of the formula A:



wherein:

n is 0, 1, 2 or 3;  
p is 0, 1, 2 or 3;  
r is 0 or 1;  
s is 0 or 1;  
m is 0 or 1;  
a is 0 or 1;  
b is 0 or 1;

X, Y and Z are independently selected from: C, N, S or O provided that at least one of X, Y or Z is N, S or O;



is: heterocycle, optionally substituted with one to three R<sup>Z</sup>;

Q is selected from: H, -NR<sup>5</sup>R<sup>6</sup> and heterocycle, said heterocycle which is optionally substituted with one to three R<sup>Z</sup>;

R<sup>1</sup> and R<sup>2</sup> are independently selected from:

- 1) (C=O)<sub>a</sub>O<sub>b</sub>C<sub>1</sub>-C<sub>10</sub> alkyl,
- 2) (C=O)<sub>a</sub>O<sub>b</sub>aryl,

- 3) C<sub>2</sub>-C<sub>10</sub> alkenyl,
- 4) C<sub>2</sub>-C<sub>10</sub> alkynyl,
- 5) (C=O)<sub>a</sub>O<sub>b</sub> heterocyclyl,
- 6) (C=O)<sub>a</sub>O<sub>b</sub>C<sub>3</sub>-C<sub>8</sub> cycloalkyl,
- 7) CO<sub>2</sub>H,
- 8) halo,
- 9) CN,
- 10) OH,
- 11) O<sub>b</sub>C<sub>1</sub>-C<sub>6</sub> perfluoroalkyl,
- 12) O<sub>a</sub>(C=O)<sub>b</sub>NR<sup>3</sup>R<sup>4</sup>,
- 13) NR<sup>c</sup>(C=O)NR<sup>3</sup>R<sup>4</sup>,
- 14) S(O)<sub>m</sub>R<sup>a</sup>,
- 15) S(O)<sub>2</sub>NR<sup>3</sup>R<sup>4</sup>,
- 16) NR<sup>c</sup>S(O)<sub>m</sub>R<sup>a</sup>,
- 17) oxo,
- 18) CHO,
- 19) NO<sub>2</sub>,
- 20) NR<sup>c</sup>(C=O)O<sub>b</sub>R<sup>a</sup>,
- 21) O(C=O)O<sub>b</sub>C<sub>1</sub>-C<sub>10</sub> alkyl,
- 22) O(C=O)O<sub>b</sub>C<sub>3</sub>-C<sub>8</sub> cycloalkyl,
- 23) O(C=O)O<sub>b</sub>aryl, and
- 24) O(C=O)O<sub>b</sub>-heterocycle,

said alkyl, aryl, alkenyl, alkynyl, heterocyclyl, and cycloalkyl optionally substituted with one or more substituents selected from R<sup>Z</sup>;

R<sup>3</sup> and R<sup>4</sup> are independently selected from:

- 1) H,
- 2) (C=O)<sub>a</sub>O<sub>b</sub>C<sub>1</sub>-C<sub>10</sub> alkyl,
- 3) (C=O)<sub>a</sub>O<sub>b</sub>aryl,
- 4) C<sub>2</sub>-C<sub>10</sub> alkenyl,
- 5) C<sub>2</sub>-C<sub>10</sub> alkynyl,
- 6) (C=O)<sub>a</sub>O<sub>b</sub> heterocyclyl,

- 7)  $(\text{C}=\text{O})_a\text{O}_b\text{C}_3\text{-C}_8$  cycloalkyl,
- 8) OH,
- 9)  $\text{C}_1\text{-C}_6$  perfluoroalkyl,
- 10)  $\text{S}(\text{O})_m\text{R}^a$ , and
- 11) CHO,

said alkyl, cycloalkyl, aryl, heterocyl, alkenyl, and alkynyl is optionally substituted with one or more substituents selected from  $\text{R}^z$ , or

$\text{R}^3$  and  $\text{R}^4$  can be taken together with the nitrogen to which they are attached to form a monocyclic or bicyclic heterocycle with 4-7 members in each ring and optionally containing, in addition to the nitrogen, 1-3 heteroatoms selected from N, O and S, said monocyclic or bicyclic heterocycle optionally substituted with one or more substituents selected from  $\text{R}^z$ ;

$\text{R}^5$  and  $\text{R}^6$  are independently selected from:

- 1) H,
- 2)  $(\text{C}=\text{O})_a\text{O}_b\text{C}_1\text{-C}_{10}$  alkyl,
- 3)  $(\text{C}=\text{O})_a\text{O}_b$ aryl,
- 4)  $\text{C}_2\text{-C}_{10}$  alkenyl,
- 5)  $\text{C}_2\text{-C}_{10}$  alkynyl,
- 6)  $(\text{C}=\text{O})_a\text{O}_b$  heterocycl,yl,
- 7)  $(\text{C}=\text{O})_a\text{O}_b\text{C}_3\text{-C}_8$  cycloalkyl,
- 8) OH,
- 9)  $\text{C}_1\text{-C}_6$  perfluoroalkyl,
- 10)  $(\text{C}=\text{O})\text{NR}^3\text{R}^4$ ,
- 11)  $\text{S}(\text{O})_m\text{R}^a$ ,
- 12)  $\text{S}(\text{O})_2\text{NR}^3\text{R}^4$ , and
- 13) CHO,

said alkyl, cycloalkyl, aryl, heterocyl, alkenyl, and alkynyl is optionally substituted with one or more substituents selected from  $\text{R}^z$ , or

$\text{R}^5$  and  $\text{R}^6$  can be taken together with the nitrogen to which they are attached to form a monocyclic or bicyclic heterocycle with 4-7 members in each ring and optionally containing, in

addition to the nitrogen, 1-3 heteroatoms selected from N, O and S, said monocyclic or bicyclic heterocycle optionally substituted with one or more substituents selected from R<sup>Z</sup>;

R<sup>Z</sup> is selected from:

- 1) (C=O)<sub>r</sub>O<sub>s</sub>(C<sub>1</sub>-C<sub>10</sub>)alkyl,
- 2) O<sub>r</sub>(C<sub>1</sub>-C<sub>3</sub>)perfluoroalkyl,
- 3) (C<sub>0</sub>-C<sub>6</sub>)alkylene-S(O)<sub>m</sub>R<sup>a</sup>,
- 4) oxo,
- 5) OH,
- 6) halo,
- 7) CN,
- 8) (C=O)<sub>r</sub>O<sub>s</sub>(C<sub>2</sub>-C<sub>10</sub>)alkenyl,
- 9) (C=O)<sub>r</sub>O<sub>s</sub>(C<sub>2</sub>-C<sub>10</sub>)alkynyl,
- 10) (C=O)<sub>r</sub>O<sub>s</sub>(C<sub>3</sub>-C<sub>6</sub>)cycloalkyl,
- 11) (C=O)<sub>r</sub>O<sub>s</sub>(C<sub>0</sub>-C<sub>6</sub>)alkylene-aryl,
- 12) (C=O)<sub>r</sub>O<sub>s</sub>(C<sub>0</sub>-C<sub>6</sub>)alkylene-heterocyclyl,
- 13) (C=O)<sub>r</sub>O<sub>s</sub>(C<sub>0</sub>-C<sub>6</sub>)alkylene-N(R<sup>b</sup>)<sub>2</sub>,
- 14) C(O)R<sup>a</sup>,
- 15) (C<sub>0</sub>-C<sub>6</sub>)alkylene-CO<sub>2</sub>R<sup>a</sup>,
- 16) C(O)H,
- 17) (C<sub>0</sub>-C<sub>6</sub>)alkylene-CO<sub>2</sub>H,
- 18) C(O)N(R<sup>b</sup>)<sub>2</sub>,
- 19) S(O)<sub>m</sub>R<sup>a</sup>,
- 20) NR<sup>c</sup>(C=O)O<sub>b</sub>R<sup>a</sup>,
- 21) O(C=O)O<sub>b</sub>C<sub>1</sub>-C<sub>10</sub> alkyl,
- 22) O(C=O)O<sub>b</sub>C<sub>3</sub>-C<sub>8</sub> cycloalkyl,
- 23) O(C=O)O<sub>b</sub>aryl, and
- 24) O(C=O)O<sub>b</sub>-heterocycle,

said alkyl, alkenyl, alkynyl, cycloalkyl, aryl, and heterocyclyl is optionally substituted with up to three substituents selected from R<sup>b</sup>, OH, (C<sub>1</sub>-C<sub>6</sub>)alkoxy, halogen, CO<sub>2</sub>H, CN, O(C=O)C<sub>1</sub>-C<sub>6</sub> alkyl, oxo, and N(R<sup>b</sup>)<sub>2</sub>;

R<sup>a</sup> is substituted or unsubstituted (C<sub>1</sub>-C<sub>6</sub>)alkyl, substituted or unsubstituted (C<sub>2</sub>-C<sub>6</sub>)alkenyl, substituted or unsubstituted (C<sub>2</sub>-C<sub>6</sub>)alkynyl, substituted or unsubstituted (C<sub>3</sub>-C<sub>6</sub>)cycloalkyl, substituted or unsubstituted aryl, (C<sub>1</sub>-C<sub>6</sub>)perfluoroalkyl, 2,2,2-trifluoroethyl, or substituted or unsubstituted heterocyclyl; and

R<sup>b</sup> is H, (C<sub>1</sub>-C<sub>6</sub>)alkyl, substituted or unsubstituted aryl, substituted or unsubstituted benzyl, substituted or unsubstituted heterocyclyl, (C<sub>3</sub>-C<sub>6</sub>)cycloalkyl, (C=O)OC<sub>1</sub>-C<sub>6</sub> alkyl, (C=O)C<sub>1</sub>-C<sub>6</sub> alkyl or S(O)<sub>2</sub>R<sup>a</sup>;

R<sup>c</sup> is selected from:

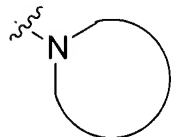
- 1) H,
- 2) C<sub>1</sub>-C<sub>10</sub> alkyl,
- 3) aryl,
- 4) C<sub>2</sub>-C<sub>10</sub> alkenyl,
- 5) C<sub>2</sub>-C<sub>10</sub> alkynyl,
- 6) heterocyclyl,
- 7) C<sub>3</sub>-C<sub>8</sub> cycloalkyl,
- 8) C<sub>1</sub>-C<sub>6</sub> perfluoroalkyl,

said alkyl, cycloalkyl, aryl, heterocyclyl, alkenyl, and alkynyl is optionally substituted with one or more substituents selected from R<sup>z</sup>;

or a pharmaceutically acceptable salt or a stereoisomer thereof.

2. (original) The compound according to Claim 1 wherein:

n is 0 or 1;



is: heterocycle selected from 2-azepinone, benzimidazolyl, benzimidazolonyl, 2-diazapinone, imidazolyl, 2-imidazolidinone, indolyl, isoquinolinyl, morpholinyl, piperidyl,

piperazinyl, pyridyl, pyrrolidinyl, 2-piperidinone, 2-pyrimidinone, 2-pyrrolidinone, quinolinyl, tetrahydrofuryl, tetrahydroisoquinolinyl, and thienyl, said heterocycle optionally substituted with one to three R<sup>Z</sup>;

Q is selected from: H and -NR<sup>5</sup>R<sup>6</sup>;

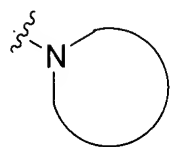
R<sup>1</sup> and R<sup>2</sup> are independently selected from:

- 1) (C=O)<sub>a</sub>O<sub>b</sub>C<sub>1</sub>-C<sub>10</sub> alkyl,
- 2) (C=O)<sub>a</sub>O<sub>b</sub>aryl,
- 3) C<sub>2</sub>-C<sub>10</sub> alkenyl,
- 4) C<sub>2</sub>-C<sub>10</sub> alkynyl,
- 5) (C=O)<sub>a</sub>O<sub>b</sub> heterocyclyl,
- 6) (C=O)<sub>a</sub>O<sub>b</sub>C<sub>3</sub>-C<sub>8</sub> cycloalkyl,
- 7) CO<sub>2</sub>H,
- 8) halo,
- 9) CN,
- 10) OH,
- 1) O<sub>b</sub>C<sub>1</sub>-C<sub>6</sub> perfluoroalkyl,
- 2) S(O)<sub>m</sub>R<sup>a</sup>,
- 3) NR<sup>c</sup>S(O)<sub>m</sub>R<sup>a</sup>,
- 4) oxo,
- 5) CHO,
- 6) NO<sub>2</sub>,
- 7) NR<sup>c</sup>(C=O)O<sub>b</sub>R<sup>a</sup>,
- 8) O(C=O)O<sub>b</sub>C<sub>1</sub>-C<sub>10</sub> alkyl,
- 9) O(C=O)O<sub>b</sub>C<sub>3</sub>-C<sub>8</sub> cycloalkyl,
- 10) O(C=O)O<sub>b</sub>aryl,
- 11) O(C=O)O<sub>b</sub>-heterocycle, and
- 12) NH<sub>2</sub>,

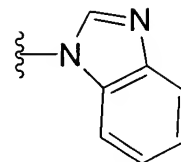
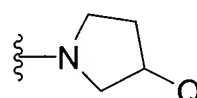
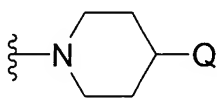
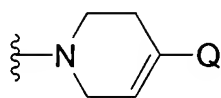
said alkyl, aryl, alkenyl, alkynyl, heterocyclyl, and cycloalkyl optionally substituted with one or more substituents selected from R<sup>Z</sup>;

or a pharmaceutically acceptable salt or a stereoisomer thereof.

3. (original) The compound according to Claim 2 wherein:



is: heterocycle selected from



said heterocycle optionally substituted with one to three  $R^Z$ ;

Q is selected from:  $-NR^5R^6$ ;

$R^5$  and  $R^6$  are independently selected from:

- 1) H,
- 2)  $(C=O)_aO_bC_1-C_{10}$  alkyl,
- 3)  $(C=O)_aO_b$ aryl,
- 4)  $C_2-C_{10}$  alkenyl,
- 5)  $C_2-C_{10}$  alkynyl,
- 6)  $(C=O)_aO_b$  heterocyclyl,
- 7)  $(C=O)_aO_bC_3-C_8$  cycloalkyl,
- 8) OH,
- 9)  $C_1-C_6$  perfluoroalkyl,
- 10)  $S(O)_mR^a$ , and
- 11) CHO,

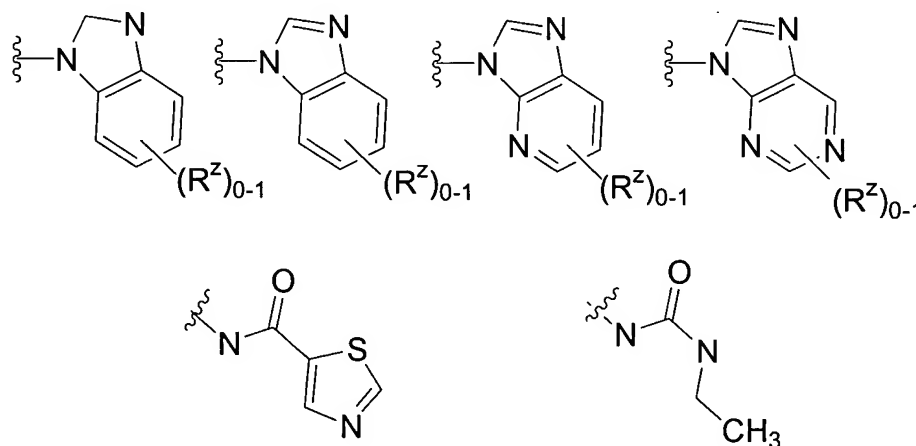
said alkyl, cycloalkyl, aryl, heterocyclyl, alkenyl, and alkynyl is optionally substituted with one or more substituents selected from  $R^Z$ , or

R<sup>5</sup> and R<sup>6</sup> can be taken together with the nitrogen to which they are attached to form a monocyclic or bicyclic heterocycle with 4-7 members in each ring and optionally containing, in addition to the nitrogen, 1-3 heteroatoms selected from N, O and S, said monocyclic or bicyclic heterocycle optionally substituted with one or more substituents selected from R<sup>Z</sup>;

or a pharmaceutically acceptable salt or a stereoisomer thereof.

4. (original) The compound according to Claim 3 wherein:

Q is selected from:



wherein R<sup>Z</sup> can attach anywhere on the bicyclic structure;

R<sup>1</sup> and R<sup>2</sup> are independently selected from:

- 1) (C<sub>1</sub>-C<sub>6</sub>)alkyl,
- 2) (C<sub>1</sub>-C<sub>10</sub>)alkyl-OH
- 3) CO<sub>2</sub>H,
- 4) halo,
- 5) CN,
- 6) OH,



- 7) oxo,
- 8) CHO,
- 9) NO<sub>2</sub>, and
- 10) NH<sub>2</sub>

R<sup>Z</sup> is independently selected from:

- 1) (C<sub>1</sub>-C<sub>6</sub>)alkyl,
- 2) (C<sub>1</sub>-C<sub>10</sub>)alkyl-OH
- 3) CO<sub>2</sub>H,
- 4) halo,
- 5) CN,
- 6) OH,
- 7) oxo,
- 8) CHO,
- 9) NO<sub>2</sub>, and
- 10) NH<sub>2</sub>

or a pharmaceutically acceptable salt or a stereoisomer thereof.

5. (original) A compound which is selected from:

1-{1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]piperidin-4-yl}-1,3-dihydro-2*H*-benzimidazol-2-one;

*N*-ethyl-*N'*-{(3*R*)-1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]pyrrolidin-3-yl}urea;

*N*-{(3*R*)-1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]pyrrolidin-3-yl}-1,3-thiazole-5-carboxamide;

9-{1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]piperidin-4-yl}-9*H*-purin-6-amine;

2-(4-{[4-(3*H*-imidazo[4,5-*b*]pyridin-3-yl)piperidin-1-yl]methyl}phenyl)-3-phenylthieno[3,4-*b*]pyrazine;

9-{1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]piperidin-4-yl}-9*H*-purine;

{1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]-1*H*-benzimidazol-2-yl}methanol;

2-{4-[(2-methyl-1*H*-benzimidazol-1-yl)methyl]phenyl}-3-phenylthieno[3,4-*b*]pyrazine;

1-{1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]-1,2,3,6-tetrahydropyridin-4-yl}-1,3-dihydro-2*H*-benzimidazol-2-one;

*N*-{(3*R*)-1-[4-(3-hydroxy-5-phenyl-2*H*-pyrazolo[3,4-*b*]pyrazin-6-yl)benzyl]pyrrolidin-3-yl}-1,3-thiazole-5-carboxamide; and

1-{1-[4-(3-hydroxy-5-phenyl-2*H*-pyrazolo[3,4-*b*]pyrazin-6-yl)benzyl]piperidin-4-yl}-1,3-dihydro-2*H*-benzimidazol-2-one;

or a pharmaceutically acceptable salt or a stereoisomer thereof.

6. (original) The TFA salt of a compound according to Claim 1 which is:

1-{1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]piperidin-4-yl}-1,3-dihydro-2*H*-benzimidazol-2-one;

*N*-ethyl-*N'*-{(3*R*)-1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]pyrrolidin-3-yl}urea;

*N*-{(3*R*)-1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]pyrrolidin-3-yl}-1,3-thiazole-5-carboxamide;

9-{1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]piperidin-4-yl}-9*H*-purin-6-amine;

2-(4-{[4-(3*H*-imidazo[4,5-*b*]pyridin-3-yl)piperidin-1-yl]methyl}phenyl)-3-phenylthieno[3,4-*b*]pyrazine;

9-{1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]piperidin-4-yl}-9*H*-purine;

{1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]-1*H*-benzimidazol-2-yl}methanol;

2-{4-[(2-methyl-1*H*-benzimidazol-1-yl)methyl]phenyl}-3-phenylthieno[3,4-*b*]pyrazine;

1-{1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]-1,2,3,6-tetrahydropyridin-4-yl}-1,3-dihydro-2*H*-benzimidazol-2-one;

*N*-{(3*R*)-1-[4-(3-hydroxy-5-phenyl-2*H*-pyrazolo[3,4-*b*]pyrazin-6-yl)benzyl]pyrrolidin-3-yl}-1,3-thiazole-5-carboxamide; and

1-{1-[4-(3-hydroxy-5-phenyl-2*H*-pyrazolo[3,4-*b*]pyrazin-6-yl)benzyl]piperidin-4-yl}-1,3-dihydro-2*H*-benzimidazol-2-one;

or a stereoisomer thereof.

7. (original) A compound according to Claim 5 which is selected from:

1-{1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]piperidin-4-yl}-1,3-dihydro-2*H*-benzimidazol-2-one;

or a pharmaceutically acceptable salt or a stereoisomer thereof.

8. (original) A pharmaceutical composition comprising a pharmaceutical carrier, and dispersed therein, a therapeutically effective amount of a compound of Claim 1.

9. (original) A pharmaceutical composition comprising a pharmaceutical carrier, and dispersed therein, a therapeutically effective amount of a compound of Claim 6.

10. (original) A method of inhibiting one or more of the isoforms of Akt in a mammal which comprises administering to the mammal a therapeutically effective amount of a compound of Claim 1.

11. (original) A method of inhibiting one or more of the isoforms of Akt in a mammal which comprises administering to the mammal a therapeutically effective amount of a compound of Claim 6.

12. (original) A method for treating cancer which comprises administering to a mammal in need thereof a therapeutically effective amount of a compound of Claim 1.

13. (original) A method for treating cancer which comprises administering to a mammal in need thereof a therapeutically effective amount of a compound of Claim 6.

14. (original) A pharmaceutical composition made by combining the compound of Claim 1 and a pharmaceutically acceptable carrier.

15. (original) A process for making a pharmaceutical composition comprising combining a compound of Claim 1 and a pharmaceutically acceptable carrier.

16. (original) The composition of Claim 8 further comprising a second compound selected from:

- 1) an estrogen receptor modulator,
- 2) an androgen receptor modulator,
- 3) retinoid receptor modulator,
- 4) a cytotoxic agent,
- 5) an antiproliferative agent,
- 6) a prenyl-protein transferase inhibitor,
- 7) an HMG-CoA reductase inhibitor,

- 8) an HIV protease inhibitor,
- 9) a reverse transcriptase inhibitor,
- 10) an angiogenesis inhibitor,
- 11) an inhibitor of inherent multidrug resistance,
- 12) an anti-emetic agent,
- 13) an agent useful in the treatment of anemia,
- 14) agent useful in the treatment of neutropenia, and
- 15) an immunologic-enhancing drug.

17-18. (canceled)

19. (original) A method of treating cancer which comprises administering a therapeutically effective amount of a compound of Claim 1 in combination with radiation therapy.

20. (original) A method of treating or preventing cancer which comprises administering a therapeutically effective amount of a compound of Claim 1 in combination with a compound selected from:

- 1) an estrogen receptor modulator,
- 2) an androgen receptor modulator,
- 3) retinoid receptor modulator,
- 4) a cytotoxic agent,
- 5) an antiproliferative agent,
- 6) a prenyl-protein transferase inhibitor,
- 7) an HMG-CoA reductase inhibitor,
- 8) an HIV protease inhibitor,
- 9) a reverse transcriptase inhibitor,
- 10) an angiogenesis inhibitor,
- 11) an inhibitor of inherent multidrug resistance,
- 12) an anti-emetic agent,
- 13) an agent useful in the treatment of anemia,
- 14) agent useful in the treatment of neutropenia, and

- 15) an immunologic-enhancing drug.

21. (original) A method of treating cancer which comprises administering a therapeutically effective amount of a compound of Claim 1 in combination with radiation therapy and a compound selected from:

- 1) an estrogen receptor modulator,
- 2) an androgen receptor modulator,
- 3) retinoid receptor modulator,
- 4) a cytotoxic agent,
- 5) an antiproliferative agent,
- 6) a prenyl-protein transferase inhibitor,
- 7) an HMG-CoA reductase inhibitor,
- 8) an HIV protease inhibitor,
- 9) a reverse transcriptase inhibitor,
- 10) an angiogenesis inhibitor,
- 11) an inhibitor of inherent multidrug resistance,
- 12) an anti-emetic agent,
- 13) an agent useful in the treatment of anemia,
- 14) agent useful in the treatment of neutropenia, and
- 15) an immunologic-enhancing drug.

22. (original) A method of treating or preventing cancer which comprises administering a therapeutically effective amount of a compound of Claim 1 and paclitaxel or trastuzumab.